

SCIENTIFIC NOTES.

THE EFFECT OF FREEZING.—The London *Body News* says it is not true, as generally supposed, that the act of freezing eliminates water and impure matter. It generally does extrude coloring matter, but not organic impurities; indeed, such matters, although prevented from decomposing by the cold, appear to decompose when exposed to the heat which holds them.

ADVANTAGE OF POWDERED LIME FOR MOISTURE.—A French engineer has made an able report on the economy of using lime, ground to a fine powder, instead of slaking it in water. He estimates the loss in using lime at 10 per cent. Besides this saving of material is the fact that lime in powder is spread with greater facility, and the mortar thus made sets quicker and is more solid.

BRONZING PORCELAIN.—Böttger gives a simple process for bronzing porcelain, stoneware, and composition picture frames, which consists in covering the article with a thin solution of water-glass, applied with a soft brush, and then sprinkling the surface with bronze powder. The article is next heated, and when the silicate of soda or water-glass is dry the bronze will become attached, and may then be polished or burnished with agate tools.

OXYGENATED WATER IN THE ATMOSPHERE.—M. Struve sends to the French Academy some interesting facts from Tiflis, the capital city of Georgia in Asiatic Russia, observed by him in reference to the quantity of nitrate of ammonia, ozone, and oxygenated oxide (peroxide of hydrogen) present in the air, and in water obtained from melting snow and ice. The author makes use of lead as a test, which was converted into peroxide.

SOLUBILITY OF SULPHUR IN COAL OILS.—M. Poincaré has sent a paper to the French Academy of Sciences on the solubility of sulphur in oils derived from coal. He shows that the denser the oil the greater the quantity of sulphur dissolved at equal temperatures, at 100° centigrade, or 212° Fahr., oil of the density of 1.620 will dissolve as much as 54 per cent, while a light benzine, having a density of 0.850, will not dissolve more than 15 per cent. The solubility of the power of solution of benzine is as much as 15 per cent, and above 120° C., or 248° F., it is almost unlimited.

MATERIAL FOR STAINING GLASS AND FAIENCE.—Ware—According to the analysis made by Dr. H. Schwartz, the substance producing a bright brown color was found to consist, in two parts, of oxide of chromium, 11.60; peroxide of iron, 21.00; alumina, 18.02; oxide of zinc, 50.30. The material is prepared by dissolving in water 11 ounces of chrome alum, 1 ounce of peroxide of iron, 160 grains of alumina, and 160 grains of zinc, which, after having been mixed and precipitated by means of carbonate of soda, are collected on a filter, washed, dried, gently ignited, and rubbed to a powder, an orange mordant.

SUNFLOWERS AS A PREVENTIVE OF INTERMITTENT FEVERS.—In consequence of experiments long since made in this country and of the publicity recently given to the statements made by M. Martin, before the Societe Therapeutique of France, on the admirable results obtained by planting sunflowers as a covering crop, for protecting the young winter wheat, the Minister of Agriculture and the head of the Sanitary Bureau in the Department of Interior in Italy have been actively engaged in promoting measures to secure the like results in the most fever-stricken districts in that kingdom.

New Publications.

HARPER'S NEW MONTHLY MAGAZINE FOR OCTOBER, 1869.

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A HEALTH TRIP TO BRAZIL.—Illustrations.—Return to the Harbor of Rio—Rio Janeiro from the Sea—Hunting Landau—Place—The Rue Beretta—Hunting Birds—Selar—The Aqueduct—A Native—An Imperial Palace—Statue of Pedro I.—The WOODCOCK.—Illustrations.—Head of Woodcock—Woodcocks at Home—Showing the Woodcock—Fire Hunting of Woodcock.—BORDER REMINISCENCES.—Illustrations.—I Don't Care if I Die a Drink!—Excellent Coffee.

MY FRIEND.—The HELDERBERG.—ILLUSTRATIONS.—The Helderberg at the Indian Leader—Mountain Sheep—Sheep—The Swallow—Fall—Specimens of Helderberg Fossils—The Helderberg Rock—The Dome—The Ferry House—The Cliff—The Starway (Cave Entrance)—The Star—Big Hibernating Moth Let Falls in Winter—Climbing amidst Iceicles.—THE LIGHTHOUSE ON MARLBOROUGH REEF.—A SCHOOL-OF-THE-PERIOD.—A BRAVELADY. By the Author of "John Halifax, Gentleman."—ILLUSTRATIONS.—Adrienne—Is There No Hope?

LOYOLA AND THE JESUITS.—LIEUT. BARKER'S GHOST STORY.—UNDER THE TREES.—THE NEW TIMOTHY. Part XI.

MY ENEMY'S DAUGHTER. By JUSTIN McCARTER. Chapter XXIX. Little's Flight.

CHAPTER XXX. A Year's Trial.

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EDITOR'S BOAT TABLE.

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EDITOR'S DRAWER.

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